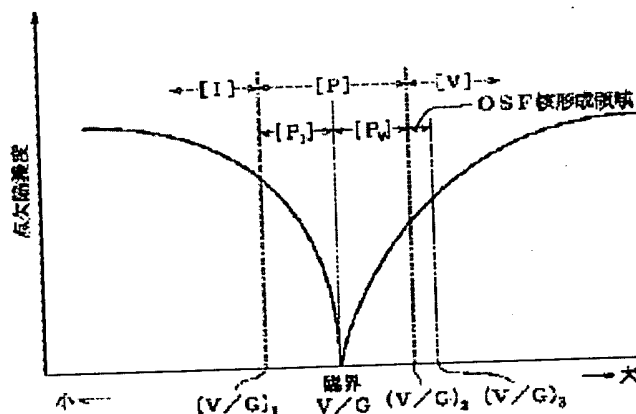


METHOD OF HEAT-TREATING SILICON WAFER

Patent number: JP2001217251
Publication date: 2001-08-10
Inventor: MUROI YUKIO; SHIOTA TAKAAKI; SHIBAZAKI HIDEAKI; KURITA KAZUNARI
Applicant: MITSUBISHI MATERIAL SILICON
Classification:
 - international: H01L21/322; H01L21/324; C30B29/06
 - european:
Application number: JP20000331700 20001031
Priority number(s): JP20000331700 20001031; JP19990335327 19991126

Abstract of JP2001217251

PROBLEM TO BE SOLVED: To obtain a wafer which exhibits an IG effect. **SOLUTION:** The region higher than the lowest interstitial silicon concentration capable of forming an interstitial dislocation, which is adjacent to a region [I] where interstitial silicon-type point defects exist dominantly and which belongs to a region [P] where point defect aggregates do not exist, is called [PI]. The region lower than the vacancy concentration capable of forming COP or FPD, which is adjacent to the region [V] where vacant point defects exist dominantly and which belongs to the region [P], is called [PV]. A wafer which is composed of a mixed region of [PV] and [PI], and the hydrogen concentration of which is 0.8×10^{18} to 1.4×10^{18} atoms/cm³ (former ASTM) is heated from room temperature to 1,150-1,200 deg.C at the rise rate of 10 to 150 deg.C/s under an atmosphere of nitrogen, argon, hydrogen or oxygen, or a mixture of these gases, is retained between 1,150 to 1,200 deg.C for 0 to 30 seconds, is successively retained between 700 and 800 deg.C for 4 to 5 hours under an atmosphere of nitrogen, and is further retained at 1,000 deg.C for 16 hours under and atmosphere of oxygen.



Data supplied from the esp@cenet database - Worldwide